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UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER
BOYCE, ANDRE D

ART UNIT	PAPER NUMBER
3623	

DATE MAILED: 05/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/824,850	JACOBS ET AL.
	Examiner	Art Unit
	Andre Boyce	3623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 July 2001*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-39* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-39* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *18 July 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

1.   Claims 1-39 have been examined.

Claim Rejections - 35 USC § 112

2.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly
> claiming the subject matter which the applicant regards as his invention.

3.   Claims 2, 20, 21, and 23-39 are rejected under 35 U.S.C. 112, second

paragraph, as being indefinite for failing to particularly point out and distinctly claim

the subject matter which applicant regards as the invention.

Claim 2 is rendered vague and indefinite for use of the phrases "forming a

window" and "encompassed by the window". The Examiner is unclear as to exactly

what is meant by this claim language.

Claim 20 is rendered vague and indefinite for use of the phrase "iterating a set of

the above acts...wherein the set excludes some of the above acts." The "above

acts" is vague and indefinite.

Claim 21 is rendered vague and indefinite for use of the term "iterating the act of

claim 20 for each shift in the list of shifts." From this language it is unclear what is

being iterated and the acts iterated should be positively recited.

Claims 23-39 are rendered vague and indefinite for use of the term "[t]he

method" at the beginning of each claim, since the claims depend from a computer

readable medium claim.

Claim 38 is rendered vague and indefinite for use of the term "iterating a set of

the above acts...wherein the set excludes some of the above acts." The "above

acts" is vague and indefinite.

Claim 39 is rendered vague and indefinite for use of the term "iterating the act of

claim 17 for each shift in the list of shifts." Claim 17 is a method claim, to which

claim 39 cannot correctly refer. Further, from this language it is unclear what is

being iterated, and the acts iterated should be positively recited.

Claim Rejections - 35 USC § 101

4.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or
> composition of matter, or any new and useful improvement thereof, may obtain a patent therefor,
> subject to the conditions and requirements of this title.

5.   Claims 1-21 are rejected under 35 U.S.C. 101 because the claimed invention is

directed to non-statutory subject matter.

The basis of this rejection is set forth in a two-prong test of:

(1) whether the invention is within the technological arts; and

(2) whether the invention produces a useful, concrete, and tangible result.

For a claimed invention to be statutory, the claimed invention must be within the

technological arts. Mere ideas in the abstract (i.e., abstract idea, law of nature,

natural phenomena) that do not apply, involve, use, or advance the technological

arts fail to promote the "progress of science and the useful arts" (i.e., the physical

sciences as opposed to social sciences, for example) and therefore are found to be

non-statutory subject matter.

For a process claim to pass muster, the recited process must somehow apply, involve, use, or advance the technological arts. In the present case, independent claims 1 and 4 only recite an abstract idea. The recited steps of forming a list of shifts, determining a shift, assigning an order, computing an amount of free time, creating a schedulable time block, etc., does not involve, use, or advance the technological arts (i.e., computer, processor, electronically, etc.), since the steps could be performed using pencil and paper.

Additionally, for a claimed invention to be statutory, the claimed invention must produce a useful, concrete, and tangible result. In the present case the claimed invention assigns an order and creates at least one opening in a shift, thereby producing a useful, concrete, and tangible result, but not within the technological arts as explained above.

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7.   Claims 1-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lesaint et al (USPN 6,578,005), in view of Babayev et al (USPN 5,615,121).

As per claim 1, Lesaint et al disclose a method for scheduling, comprising:

forming a list of shifts in a schedule (i.e., calculating a provisional schedule for each

technician, column 8, lines 12-14); determining a shift in which an order can be

scheduled (i.e., allocating tasks to technicians, column 11, lines 3-7); and assigning

the order to the shift determined by the act of determining (i.e., real-time modifier is

programmed to allocate tasks to technicians according to the provisional schedule,

column 11, lines 6-7). Lesaint et al does not explicitly disclose the acts of forming,

determining, and assigning are contemporaneously executed while a customer is on

a phone attempting to schedule the order. Babayev et al disclose customers phone

in service requests to company representatives, who in turn, provide the customer,

substantially immediately, with information regarding the time frame of the service

request (column 4, lines 11-17). Both Lesaint et al and Babayev disclose tools for

scheduling tasks, wherein orders are received from customers, therefore it would

have been obvious to one having ordinary skill in the art at the time the invention

was made to include executing while a customer is on a phone attempting to

schedule the order in Lesaint et al, as seen in Babayev et al, as an efficient manner

of receiving and distributing customer orders to the correct technician in Lesaint et

al, thereby improving customer service.

As per claim 2, Lesaint et al disclose forming a window over a schedule of a

worker (i.e., appointment time of the task, column 22, lines 40-41), wherein the

window encompasses a portion of the number of shifts in the schedule of the worker,

and wherein forming a list of shifts includes selecting at least one shift from the

portion of the number of lists encompassed by the window (i.e., all the possible

positions in the tour are examined until a valid positions is found, determined by reference to the appointment slot, column 22, lines 41-44).

As per claim 3, Lesaint et al disclose assigning to an earlier time period of the shift before assigning to a later time period of the shift (i.e., selectable tasks sorted based on earliest start time of tasks, column 12, lines 54-58).

As per claim 4, Lesaint et al disclose a method for finding an opening in which to fit an order in a schedule (provisional generation system 30/31 used to program real-time modifier 40 to allocate tasks to technicians, column 11, lines 3-7) , comprising: computing an amount of free time required in a shift to fit the order (estimated time of completion, which includes the estimated time of arrival plus the duration of the task, column 18, lines 56-59); creating a schedulable time block from a virtual free time block valid position, wherein the task may be fitted, column 22, lines 48-51), wherein the schedulable time free block includes a primary block, zero or more expansion blocks, and zero or more load blocks (i.e., allowable margins, including deallocation and movement of a task, column 22, lines 51-55, column 23, lines 16-28); wherein the primary block is a candidate to fit the order if a duration of the primary block, excluding at least one break, is greater than or equal to the amount of free time required in the shift to fit the order (pre-scheduler 30 calculates time the technician is next available and position each break at its earliest possible start time, column 11, lines 50-54 and 64-65); and creating at least one opening in the shift from the schedulable time block (i.e., allocation of tasks to technicians, column 11, lines 3-7). Lesaint does not explicitly disclose presenting to a customer at least one

option of fitting the order in the schedule to perform a desired service. Babayev et al disclose if the customer preferred time interval cannot be accommodated, then an alternative appointment time may be provided, relatively close to the preferred time interval (column 4, lines 45-50). Both Lesaint et al and Babayev disclose tools for scheduling tasks, wherein orders are received from customers, therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to include presenting to a customer at least one option of fitting the order in the schedule to perform a desired service in Lesaint et al, as seen in Babayev et al, as an efficient manner of receiving and distributing customer orders to the correct technician in Lesaint et al, thereby improving customer service.

As per claim 5, Lesaint et al disclose generating a list of shifts from a window defined over a set of shifts of a worker (i.e., optimizing system 31 may move tasks within their time windows and insert tasks before, between, or after them, column 16, lines 12-14).

As per claim 6, Lesaint et al disclose generating a list of virtual free time blocks from a shift of a worker (i.e., scheduling the tour of the technician, column 10, lines 26-30).

As per claim 7, Lesaint et al disclose calculating a travel time between a first activity and a second activity (i.e., t = journey time between two tasks, column 13, lines 51-54).

As per claim 8, Lesaint et al disclose calculating a difference travel time when the order is inserted into a virtual free time block of the shift of the worker, defined as a

result of a subtraction of the travel time between the first activity and the second

activity and the travel time of the order and the second activity (i.e., t defined as time

between tasks, wherein the pre-scheduler checks every position in each technicians

tour, column 13, lines 61-65).

As per claim 9, Lesaint et al disclose calculating a job time, wherein the job time

is defined as the time that the order will take to be performed in the shift (estimated

time of completion of the task, column 18, lines 56-57).

As per claim 10, Lesaint et al disclose summing the travel time, the difference

travel time, and the job time (estimated time of completion, including time to

complete the task and estimated time of arrival, column 18, lines 56-59).

As per claim 11, Lesaint et al disclose computing an extra time by relocating a

portion of the shift to fit the order (i.e., amount of time to delay a task, based on

relocating a certain amount of time, column 17, lines 26-30).

As per claim 12, Lesaint et al disclose computing the amount of time that the

portion of the shift must be shifted, defined as a result of a subtraction of the amount

of free time required in the shift to accommodate the order and a time available in

the virtual free time block (i.e., pre-scheduler 30 calculates the time the technician is

next available, using expected duration plus travel time, column 11, lines 50-54).

As per claim 13, Lesaint et al disclose computing an amount of time that the

portion of the shift can be relocated, including aggregating a number of virtual free

time blocks in the portion of the shift (i.e.., task will not be scheduled to a position

where the technician would arrive outside the start time plus an allowed margin, column 22, lines 51-54).

As per claim 14, Lesaint et al disclose computing the extra time by relocating a portion of the shift to later in time in the shift (i.e., calculating the earliest and latest that each task may be started, when attempting to add tasks to the tour, column 11, lines 38-41 , wherein the primary block is a candidate to fit the order if the extra time plus the duration of the primary block is greater than or equal to the amount of free time required in the shift to fit the order (i.e., calculation of the time the technician is next available, including duration of the activity plus travel time, column 11, lines 51-54), and updating the at least one expansion block if the primary block is a candidate (i.e., working out the earliest and latest time tasks may be started, column 11, lines 38-41).

As per claim 15, Lesaint et al disclose computing extra time by relocating a portion of the shift to earlier in time in the shift (i.e., bringing forward the task a amount of time, column 17, lines 26-30), if the act of executing the act of computing the extra time by relocating a portion of the shift to later in time and the act of examining the primary block determine that the primary block is not a candidate (i.e., delaying a task the same amount of time as bringing another task forward, column 17, lines 30-35), wherein the primary block is a candidate to fit the order if the extra time plus the duration of the primary block is greater than or equal to the amount of free time required in the shift to fit the order (i.e., equal to the shift in time), and

updating the at least one expansion block if the primary block is a candidate (i.e.,

updating of tasks that improves the cost function, column 17, lines 35-38).

As per claim 16, Lesaint et al disclose eliminating the virtual free time block from

further consideration if the act of computing the extra time by relocating a portion of

the shift to earlier in time in the shift and the act of examining the primary block

determine that the primary block is not a candidate (i.e., the cost of moving the task

forward is a greater cost then delaying the subsequent task, thus no move, column

17, lines 26-30).

As per claim 17, Lesaint et al disclose checking a load limit, including adding the

amount of free time required in the shift to fit the order to a current load of the shift to

define a new load (i.e., position is examined to see if the task can be fitted into the

position, wherein the tour gap must be big enough to include the task, or to delay all

subsequent tasks, column 22, lines 35-39), and wherein checking includes

comparing the new load against the load limit (i.e., all tours are examined, until valid

position is found, column 22, lines 40-42).

As per claim 18, Lesaint et al disclose reducing a total load of the shift by finding

at least one virtual free time blocks to be removed (i.e., delay of all subsequent

tasks in order to create a gap large enough to insert the task, column 22, lines 35-

39), wherein the act of reducing executes an act of adding the at least one virtual

free time block to be removed (i.e., time block created by delay of subsequent

tasks), and updating the at least one load block if the act of finding finds at least one

virtual free time block to be removed (i.e., task inserted into schedule and revised cost calculated, column 22, lines 61-63).

As per claim 19, Lesaint et al disclose eliminating the virtual free time block if the act of reducing fails to reduce the total load of the shift to fit the order (i.e., cost of revised schedule is compared against cost of best existing value, column 22, lines 63-66).

As per claim 20, Lesaint et al disclose iterating a set of the above acts for each virtual free time block in the list of virtual free time blocks, wherein the set excludes some of the above acts (i.e., process repeated for another task using revised or previous schedule, wherein the new best solution is saved, column 23, lines 11-15).

As per claim 21, Lesaint et al disclose iterating the act of claim 20 for each shift in the list of shifts (i.e., process repeated for another task using revised or previous schedule, column 23, lines 16-19).

Claims 22-39 are rejected based upon the rejection of claims 4-21, respectively, since they are the computer readable medium claims corresponding to the method claims.

Conclusion

8.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

-Powell et al (US 2001/0049619) disclose allocating appointment windows.

-Edgar et al (USPN 5848395) disclose an appointment booking and scheduling.

-Andre et al (USPN 6278978) disclose improving an agent schedule.

-Sunderman et al (USPN 6144971) disclose a schedule adherence system for a plurality of agents.

-Bucci et al (USPN 6823315) disclose dynamically scheduling a workforce.

-Brodersen et al (USPN 6850895) disclose assigning resources to tasks in a rule-based system.

-MDSI Mobile Data Solutions (mdsi-advantex.com, December 1998) discloses the MDSI Advantex series for customer solutions to courier management.

9.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andre Boyce whose telephone number is (571) 272-6726. The examiner can normally be reached on 9:30-6pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tariq Hafiz can be reached on (571) 272-6729. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

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Electronic Business Center (EBC) at 866-217-9197 (toll-free).

adb
May 16, 2005

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